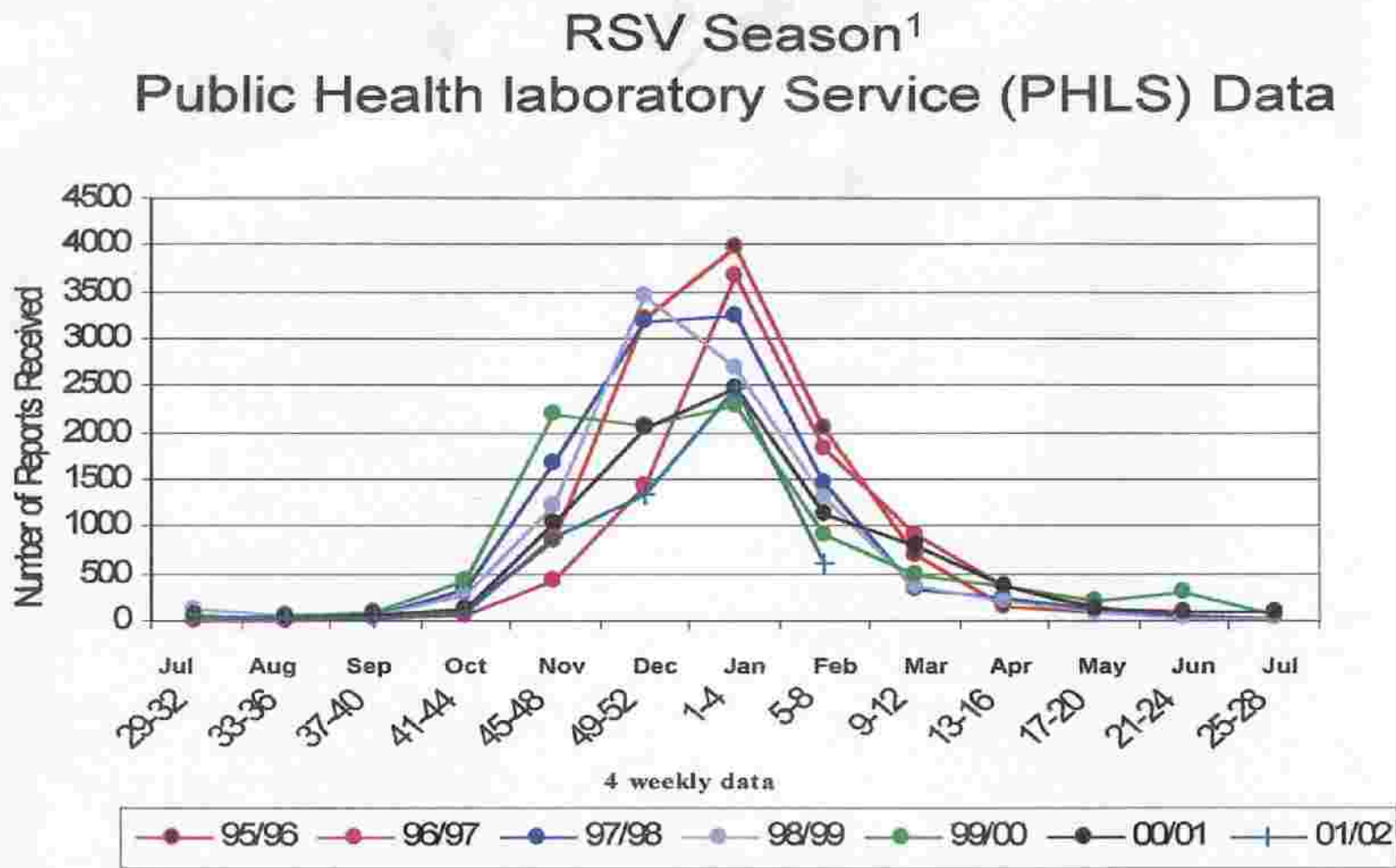




Acute Respiratory Problems

Bronchiolitis



RSV

- All children exposed by 2 years of age
- On first exposure - URTI -- acute bronchiolitis
- Natural immunity not fully protective
- Recurrent infections - URTI
- Spread -- large fomite
- WASH YOUR HANDS

Preventative strategies

- Stop smoke exposure
- Avoid crowded living conditions
- Avoid URTI carriers
- Spread – large fomite – therefore WASH HANDS
- Avoid sharing toys

Preventative strategies

- Palivizumab
- Passive immunisation strategy
- Monthly im injections in season
- Decreases RSV hospitalisation in at risk groups
- Cost £3530/case
- NNT 17 – 22 ie £60000-£77000 to avoid 1 admission

Treatment

- Supportive only
- OXYGEN
- No evidence to support any of the other multiple drug therapies which have been tried.
 - **Who to refer**
- Ex preterm still < 3months
- Hypoxic/ working very hard
- Poor feeding – only after little and often has been tried

Early life respiratory viral infections, atopic sensitisation, and risk of subsequent development of persistent asthma

Kusel MM et al J Allergy Clin Immunol 2007

- 198 children high atopic risk followed from birth to 5 years
- All episodes RTI in 1st year postnasal aspirates for viruses
- History wheeze and asthma collected annually
- Atopy assessed 6/12, 2 y and 5 years

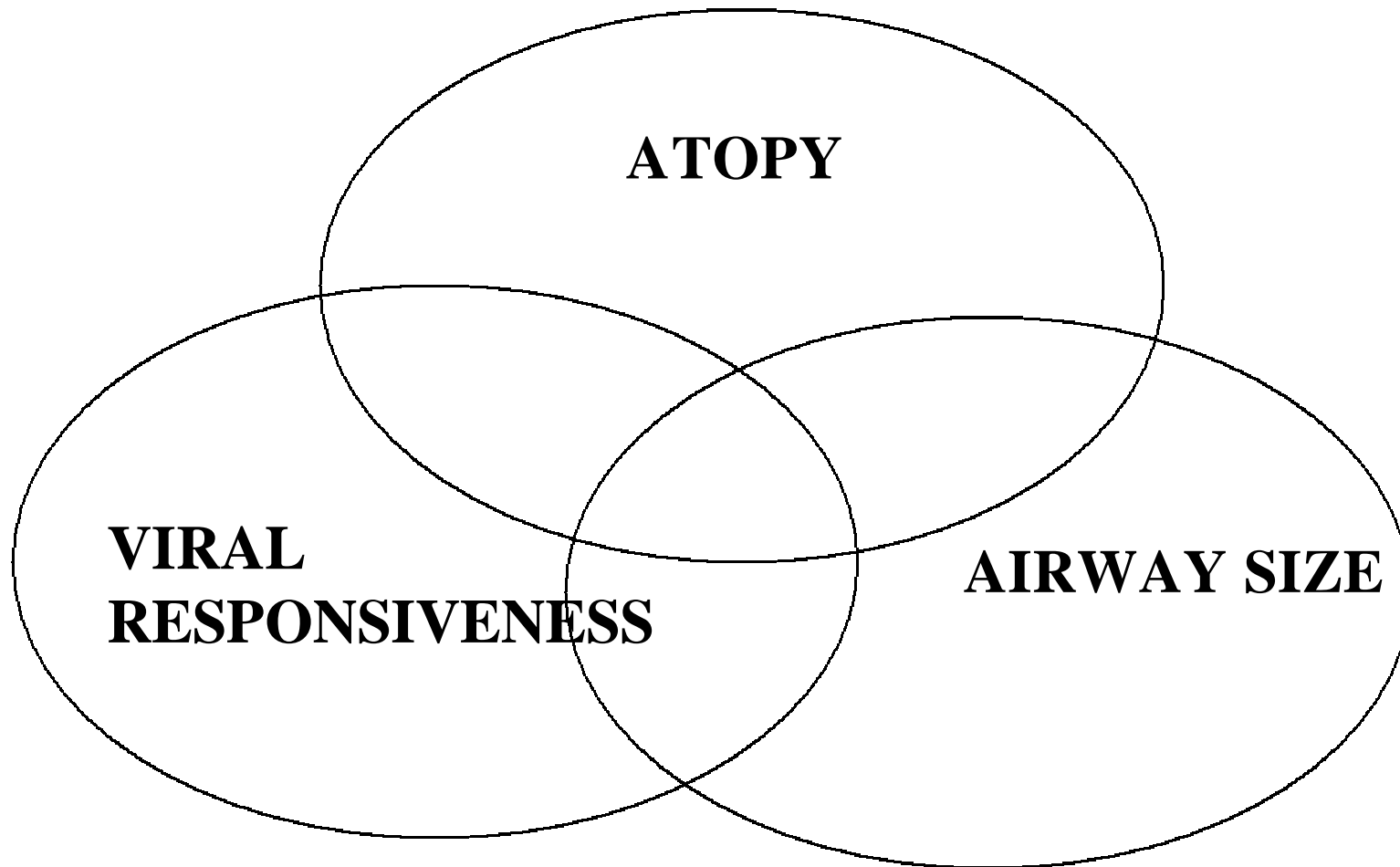
Results

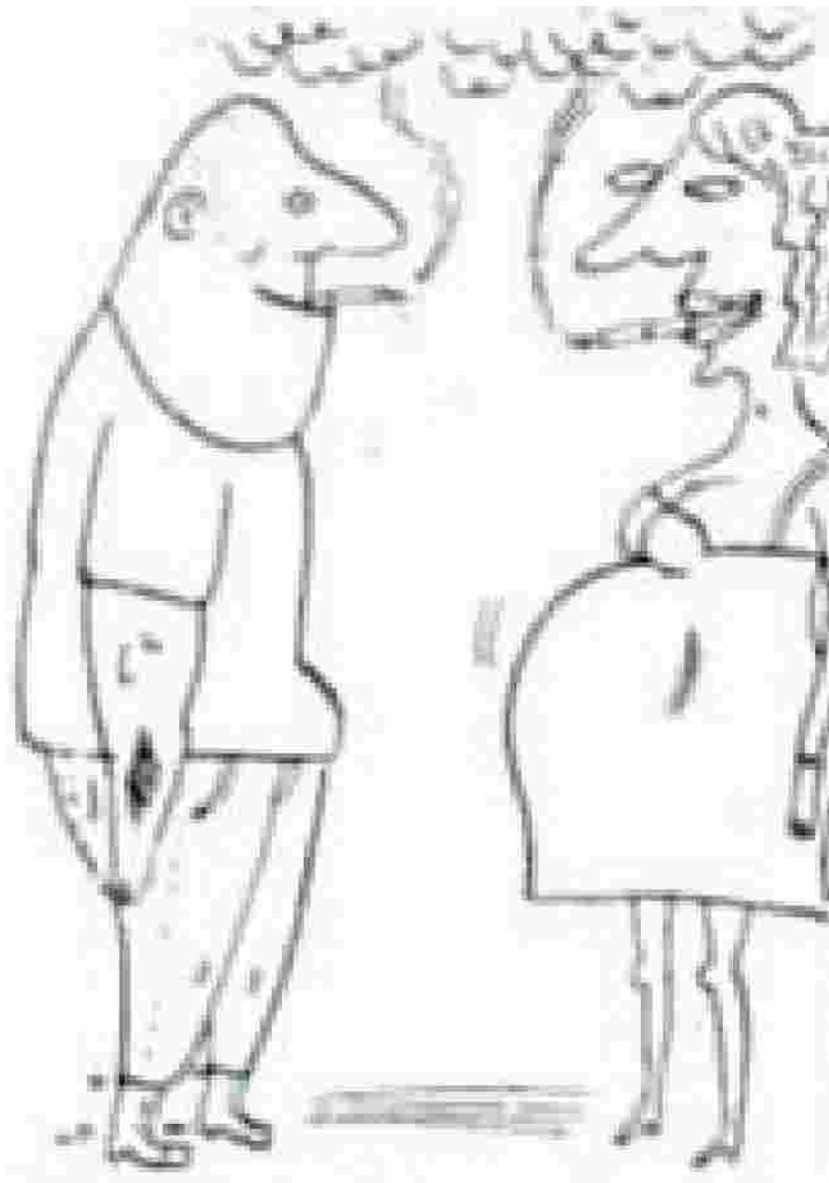
- 815 episodes RTI; 33% LRTI
- Viruses in 69% - rhinovirus 48%; RSV 11%
- At age 5 years
 - 28% had current wheeze
 - assoc wheezy and/or febrile LRI (OR 3.9; 1.4-10.5)
 - esp Rhinovirus or RSV (OR 4.1 ;1.3-12.6)
- BUT only in those atopic ≤ 2 years

Suggests

- Viral infections interact with atopy in infancy to promote later asthma
- (maximum risk in narrow developmental window)
- Could ‘protection’ of ‘high-risk’ children against LRI in infancy be effective in primary asthma prevention??

Infant wheeze





There - I
definitely
felt it
cough

Wheeze

- Acute treatment
- Salbutamol – always first choice drug independent of age
- Prednisolone





Two phenotypes of wheezing in preschool years

- with distinct natural history.
- Frequent wheezing in the first 3 years of life with risk factors for asthma (e.g., eczema, maternal asthma) predicts symptoms in older age,
- infrequent viral-associated wheezing without risk factors for asthma has a benign prognosis.

Frequent wheezing with risk factors for asthma

- Maintenance inhaled corticosteroids can control symptoms in children with frequent wheezing associated with risk factors for asthma
- Does not affect long term natural history

Short course montelukast for intermittent asthma in childhood.

- Children aged 2-14yrs
- Intermittent asthma; no symptoms between episodes; 3-6 episodes in past 12months
- N=220 Montelukast or placebo
- Start of each URTI for at least 7/7 or till symptoms settled
- 681 episodes (345 Mont; 336 placebo) in 202 patients

Results

- Unscheduled health care resource utilisation
M 163 vs P 228
- OR 0.65 (0.47-0.89)
- Symptoms ↓ 14%; Nights awake ↓ 8.3%
- Days off school/childcare ↓ 37%
- Parents days off work ↓ 33% (p<0.0001)

Who did it work for?

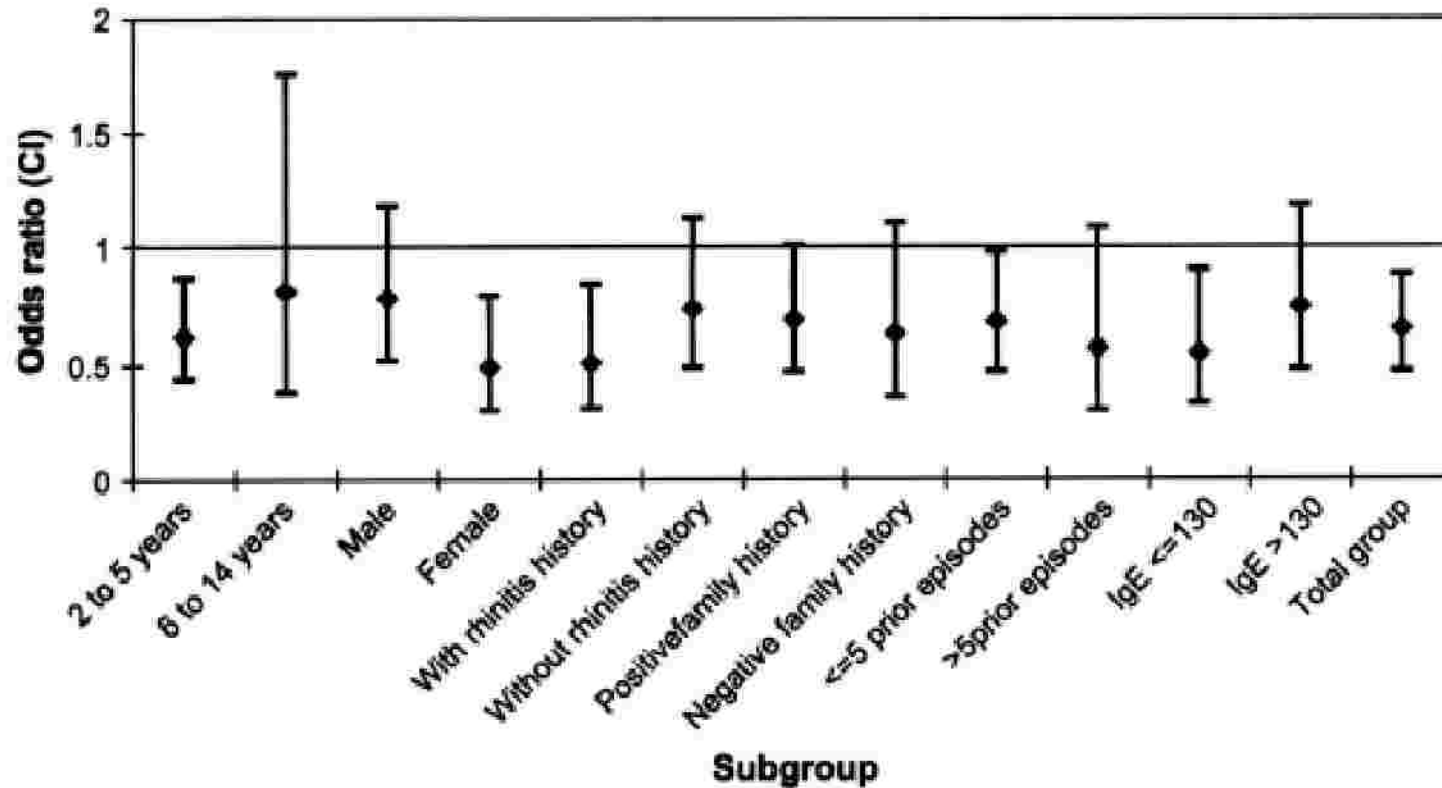
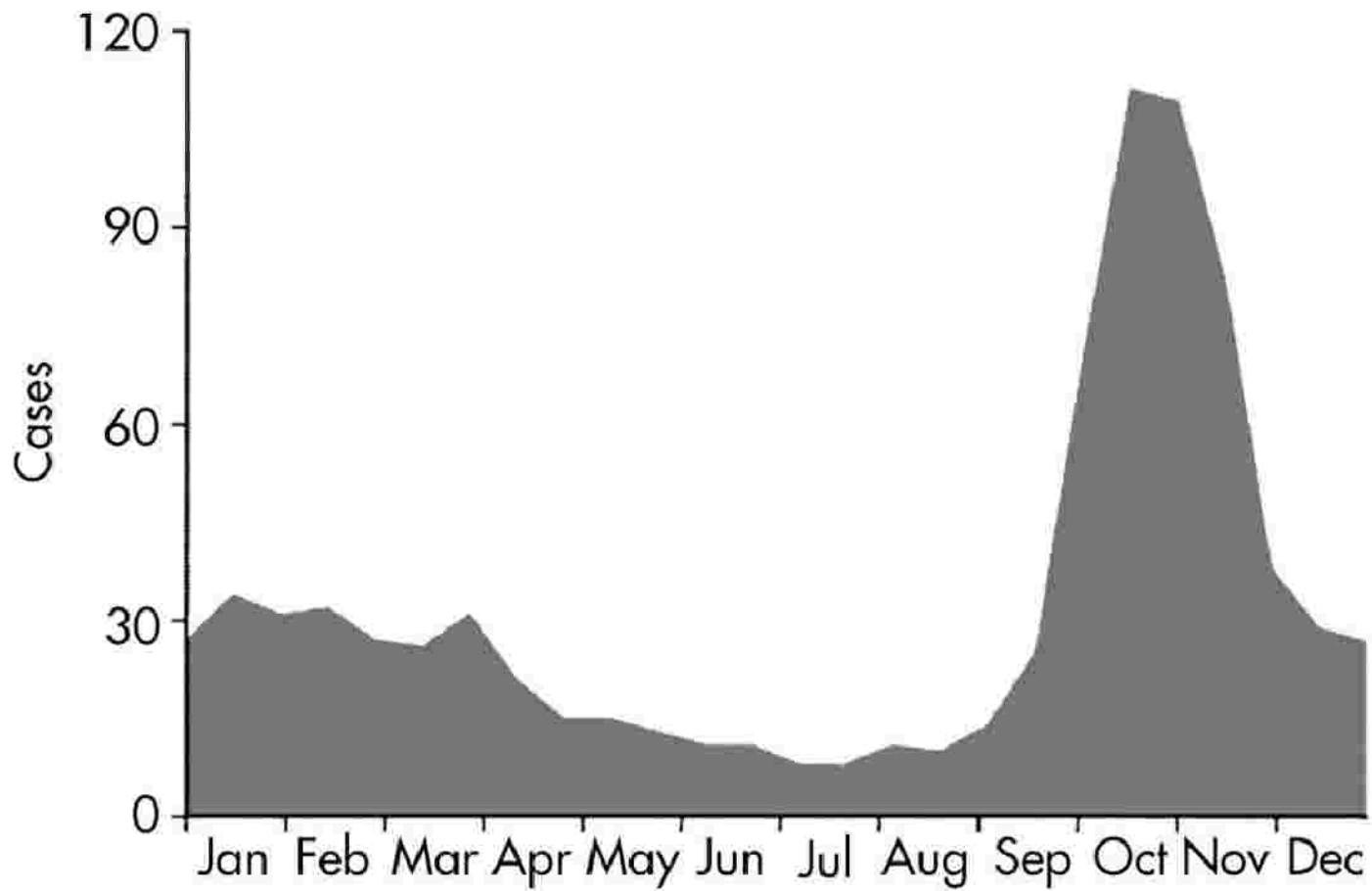


Figure 2. Subgroup analysis of primary end point, proportion of episodes treated that required health resource utilization.

Stridor

Croup Seasonality

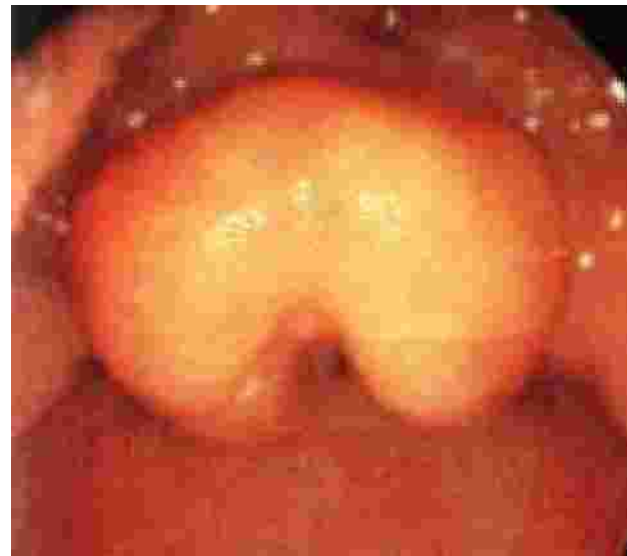


Refer

- Significant stridor at rest with recession
- High fever $> 38.5^{\circ}\text{C}$, looks toxic
- Hypoxia – unusual in croup and sign of very severe disease
- Drooling, unable to swallow

Differential diagnosis

- Viral croup
- Bacterial tracheitis
- Foreign body
- Epiglottitis



Treatment



- Oral Dexamethasone
or
- Prednisolone
- Review
- Nebulised adrenaline

Pneumonia

- Bacterial pneumonia

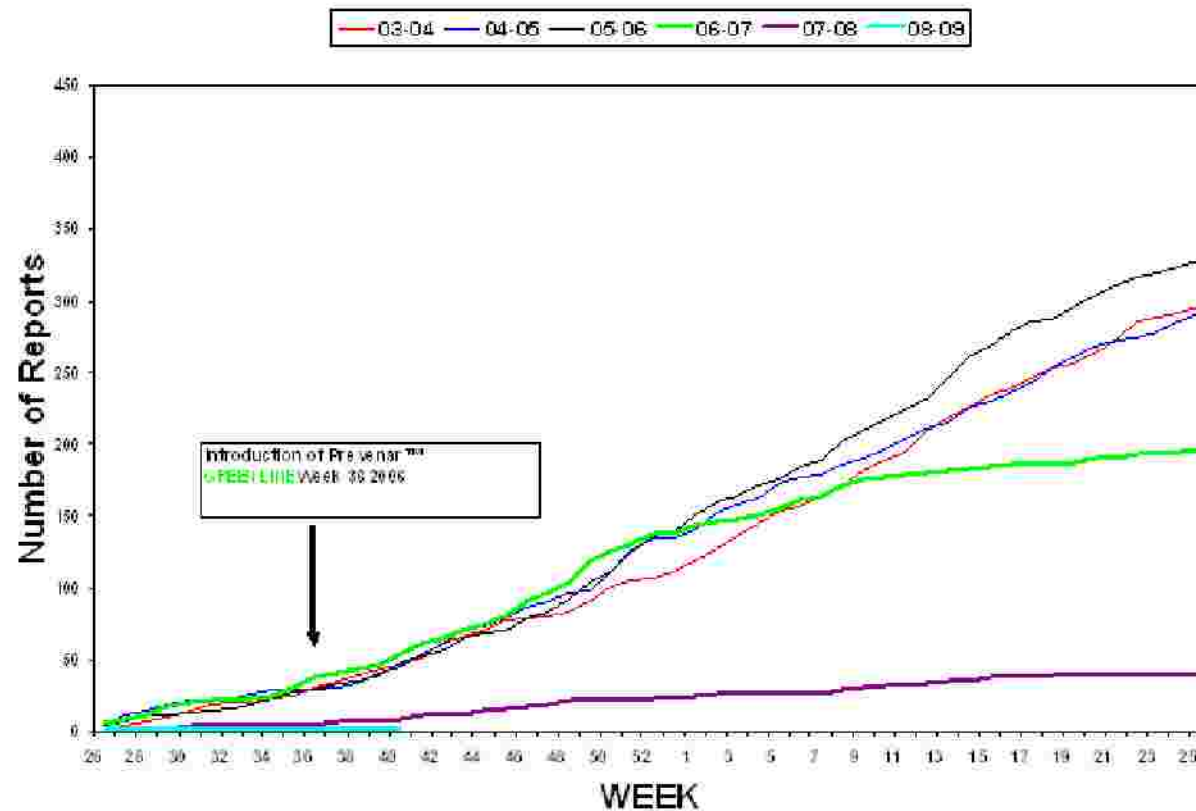


- should be considered when there is fever $>38.5^{\circ}\text{C}$ along with chest recession and respiratory rate $>50/\text{minute}$ (B).
- If wheeze is present in young children a primary bacterial pneumonia is very unlikely (B).

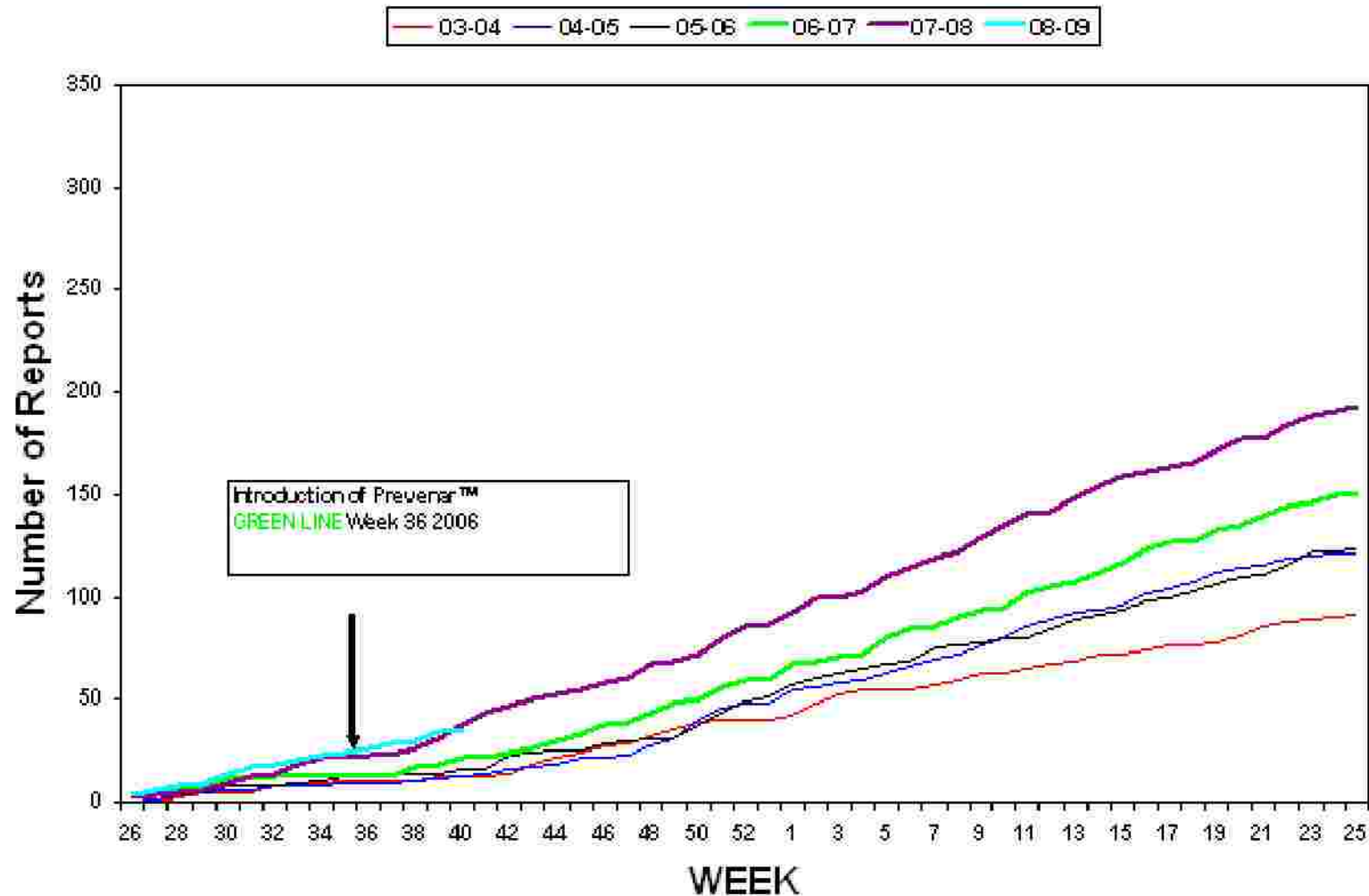
Epidemiology and treatment

- *Streptococcal pneumoniae* is by far the commonest bacterial cause at all ages.
- Amoxicillin is treatment of choice

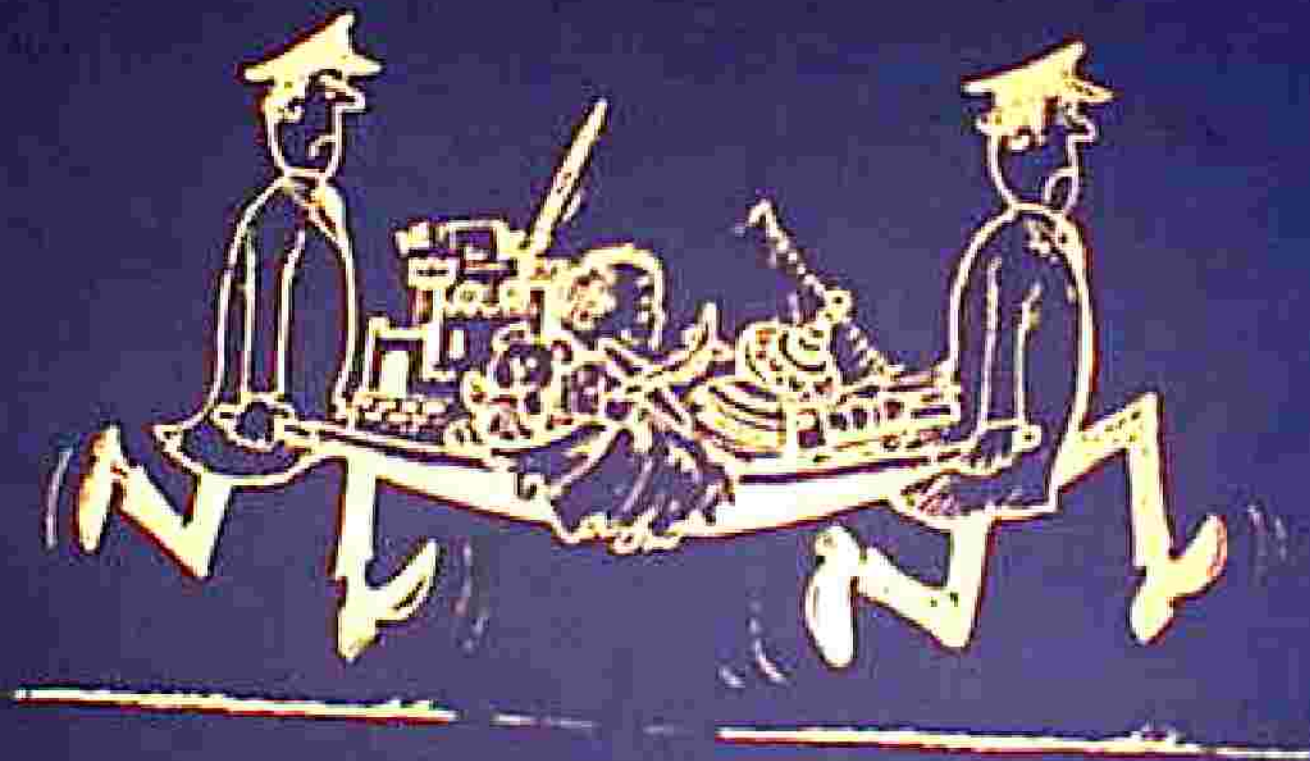
Invasive pneumococcal disease – prevenar serotypes



Invasive pneumococcal disease non prevenar serotypes



CHILDREN'S WARD



Admission Criteria

- toxic appearance
- severe respiratory distress
- clinical evidence of dehydration
- vomiting
- **HYPOXAEMIA**



Oral or intravenous antibiotic?

- A randomised controlled equivalence trial to compare oral and intravenous treatment in children with community acquired pneumonia :PIVOT trial

M. Atkinson et al Arch Dis Child 2005;90(suppl II):A87

Oral or intravenous antibiotic?

- Entry criteria
 - Respiratory signs and symptoms
 - Temp >37.5
 - Radiological evidence pneumonia
- Primary outcome
 - time to temperature $< 38^{\circ}\text{C}$ for 24 hours and no oxygen requirement

Oral or intravenous antibiotic?

- N= 252
- 120 treatment iv benzyl penicillin
- 126 treatment oral amoxicillin

Results

Median time temp < 38 C

– 1.31 days iv group vs 1.34 days oral

- Median length hospital stay

– 2.1 days iv group vs 1.77 days oral group
($p < 0.001$)

- Complications

– No difference

Change of practice ?

- Trying but not always succeeding!

